

May 17, 2017

Tom Moe  
USS Corporation  
P.O. Box 417  
8771 Park Ridge Dr  
Mountain Iron, MN 55768

RE: Project: USS MinnTac NPDES-LINE 3 Wk1  
Pace Project No.: 1286782

Dear Tom Moe:

Enclosed are the analytical results for sample(s) received by the laboratory on May 03, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Melisa M Woods  
melisa.woods@pacelabs.com  
(218)742-1042  
Project Manager

Enclosures

cc: Terri Sabetti, NTS



## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
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## CERTIFICATIONS

Project: USS MinnTac NPDES-LINE 3 Wk1

Pace Project No.: 1286782

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### Virginia Minnesota Certification ID's

315 Chestnut Street, Virginia, MN 55792

California Certification #2973

Montana Certificate #CERT0103

California Certification #2973

Alaska Certification UST-107

Alaska Certification UST-107

Alaska Certification #MN01084

Arizona Department of Health Certification #AZ0785

Minnesota Dept of Health Certification #: 027-137-445

North Dakota Certification: # R-203

Wisconsin DNR Certification # : 998027470

WA Department of Ecology Lab ID# C1007

Nevada DNR #MN010842015-1

Oklahoma Department of Environmental Quality

California Certification #2973

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: USS MinnTac NPDES-LINE 3 Wk1

Pace Project No.: 1286782

Lab ID	Sample ID	Matrix	Date Collected	Date Received
1286782001	WS-002 Scrubber Make-Up	Water	05/03/17 09:40	05/03/17 13:00
1286782002	WS-003 Thickner Overflow	Water	05/03/17 09:30	05/03/17 13:00
1286782003	WS-003 Thichner overflow	Water	05/03/17 09:30	05/03/17 13:00

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## SAMPLE ANALYTE COUNT

Project: USS MinnTac NPDES-LINE 3 Wk1

Pace Project No.: 1286782

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
1286782001	WS-002 Scrubber Make-Up	EPA 200.7	MAR	3	PASI-V
		EPA 300.0	DMB	1	PASI-V
1286782002	WS-003 Thickner Overflow	EPA 200.7	MAR	3	PASI-V
		EPA 300.0	DMB	1	PASI-V
1286782003	WS-003 Thichner overflow	EPA 300.0	DMB	2	PASI-V

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## ANALYTICAL RESULTS

Project: USS MinnTac NPDES-LINE 3 Wk1

Pace Project No.: 1286782

Sample: <b>WS-002 Scrubber Make-Up</b> Lab ID: <b>1286782001</b> Collected: 05/03/17 09:40 Received: 05/03/17 13:00 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 MET ICP, Lab Filtered</b> Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Calcium, Dissolved	<b>108</b>	mg/L	5.0	0.058	10	05/05/17 11:40	05/08/17 16:22	7440-70-2	
Magnesium, Dissolved	<b>220</b>	mg/L	5.0	0.64	10	05/05/17 11:40	05/08/17 16:22	7439-95-4	
Total Hardness, Dissolved	<b>1180</b>	mg/L	100	2.8	10	05/05/17 11:40	05/08/17 16:22		
<b>300.0 IC Anions 28 Days</b> Analytical Method: EPA 300.0									
Sulfate	<b>871</b>	mg/L	20.0	10.0	10		05/16/17 06:34	14808-79-8	

Sample: <b>WS-003 Thickner Overflow</b> Lab ID: <b>1286782002</b> Collected: 05/03/17 09:30 Received: 05/03/17 13:00 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 MET ICP, Lab Filtered</b> Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Calcium, Dissolved	<b>593</b>	mg/L	5.0	0.058	10	05/05/17 11:40	05/08/17 16:26	7440-70-2	
Magnesium, Dissolved	<b>215</b>	mg/L	5.0	0.64	10	05/05/17 11:40	05/08/17 16:26	7439-95-4	
Total Hardness, Dissolved	<b>2370</b>	mg/L	100	2.8	10	05/05/17 11:40	05/08/17 16:26		
<b>300.0 IC Anions 28 Days</b> Analytical Method: EPA 300.0									
Sulfate	<b>1740</b>	mg/L	40.0	20.0	20		05/16/17 06:57	14808-79-8	

Sample: <b>WS-003 Thichner overflow</b> Lab ID: <b>1286782003</b> Collected: 05/03/17 09:30 Received: 05/03/17 13:00 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>300.0 IC Anions 28 Days</b> Analytical Method: EPA 300.0									
Chloride	<b>561</b>	mg/L	10.0	5.0	10		05/16/17 07:43	16887-00-6	
Fluoride	<b>10.2</b>	mg/L	1.0	0.50	10		05/16/17 07:43	16984-48-8	

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## QUALITY CONTROL DATA

Project: USS MinnTac NPDES-LINE 3 Wk1

Pace Project No.: 1286782

QC Batch: 112866

Analysis Method: EPA 200.7

QC Batch Method: EPA 200.7

Analysis Description: 200.7 MET Dissolved

Associated Lab Samples: 1286782001, 1286782002

METHOD BLANK: 445757

Matrix: Water

Associated Lab Samples: 1286782001, 1286782002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium, Dissolved	mg/L	ND	0.50	0.0058	05/08/17 14:52	
Magnesium, Dissolved	mg/L	ND	0.50	0.064	05/08/17 14:52	

LABORATORY CONTROL SAMPLE: 445758

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium, Dissolved	mg/L	50	50.6	101	85-115	
Magnesium, Dissolved	mg/L	50	49.7	99	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 445759 445760

Parameter	Units	1286799005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium, Dissolved	mg/L	38.5	50	50	86.9	86.9	97	97	70-130	0	20	
Magnesium, Dissolved	mg/L	28.0	50	50	76.3	76.0	96	96	70-130	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 445761 445762

Parameter	Units	1286825002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium, Dissolved	mg/L	58.0	50	50	106	106	96	95	70-130	0	20	
Magnesium, Dissolved	mg/L	50.3	50	50	97.9	98.6	95	97	70-130	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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## QUALITY CONTROL DATA

Project: USS MinnTac NPDES-LINE 3 Wk1

Pace Project No.: 1286782

QC Batch: 113750 Analysis Method: EPA 300.0  
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions  
Associated Lab Samples: 1286782001, 1286782002, 1286782003

METHOD BLANK: 448740 Matrix: Water

Associated Lab Samples: 1286782001, 1286782002, 1286782003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.50	05/15/17 19:50	
Fluoride	mg/L	ND	0.10	0.050	05/15/17 19:50	
Sulfate	mg/L	ND	2.0	1.0	05/15/17 19:50	

LABORATORY CONTROL SAMPLE: 448741

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	53.2	106	90-110	
Fluoride	mg/L	5	5.0	101	90-110	
Sulfate	mg/L	50	52.5	105	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 448742 448743

Parameter	Units	1286612001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	365	500	500	910	904	109	108	90-110	1	20	
Fluoride	mg/L	30.9	50	50	79.1	81.4	96	101	90-110	3	20	
Sulfate	mg/L	126	500	500	680	685	111	112	90-110	1	20 M6	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 448744 448745

Parameter	Units	1287028001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	12.7	50	50	67.4	68.2	109	111	90-110	1	20 M1	
Fluoride	mg/L	ND	5	5	5.0	5.1	100	101	90-110	1	20	
Sulfate	mg/L	492	500	500	1020	1050	105	112	90-110	3	20 M6	

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## QUALIFIERS

Project: USS MinnTac NPDES-LINE 3 Wk1

Pace Project No.: 1286782

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### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### LABORATORIES

PASI-V Pace Analytical Services - Virginia

### ANALYTE QUALIFIERS

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

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## QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: USS MinnTac NPDES-LINE 3 Wk1

Pace Project No.: 1286782


Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
1286782001	WS-002 Scrubber Make-Up	EPA 200.7	112866	EPA 200.7	112938
1286782002	WS-003 Thickner Overflow	EPA 200.7	112866	EPA 200.7	112938
1286782001	WS-002 Scrubber Make-Up	EPA 300.0	113750		
1286782002	WS-003 Thickner Overflow	EPA 300.0	113750		
1286782003	WS-003 Thichner overflow	EPA 300.0	113750		

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	Document Name: <b>Sample Condition Upon Receipt Form</b>	Document Revised: 15Mar2016 Page 1 of 1
	Document No.: <b>F-VM-C-001-Rev.10</b>	Issuing Authority: Pace Virginia, Minnesota Quality Office

**Sample Condition  
Upon Receipt**

Client Name:

Project #:

USS

**WO# : 1286782**

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☒ Client  
☐ Commercial ☐ Pace ☐ Other: \_\_\_\_\_

PM: MMW Due Date: 05/17/17

CLIENT: USS CORP

Tracking Number: \_\_\_\_\_

Custody Seal on Cooler/Box Present? ☐ Yes ☒ No Seals Intact? ☐ Yes ☒ No Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☒ Other: ILE Temp Blank? ☒ Yes ☐ No

Thermometer Used: ☒ 140792808 Type of Ice: ☒ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun

Cooler Temp Read °C: 0.3 Cooler Temp Corrected °C: 0.3 Biological Tissue Frozen? ☐ Yes ☐ No ☒ NA  
Temp should be above freezing to 6°C Correction Factor: +0.3 Date and Initials of Person Examining Contents: 8/5/3/17

Comments:

Chain of Custody Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name and Signature on COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5. If Fecal: <input type="checkbox"/> <8 hours <input type="checkbox"/> >8, <24 hours <input type="checkbox"/> >24 hours
Short Hold Time Analysis (<72 hr)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered Volume Received for Dissolved Tests?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	11. Note if sediment is visible in the dissolved containers.
Sample Labels Match COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes Date/Time/ID/Analysis Matrix: <u>WT</u>		
All containers needing acid/base preservation will be checked and documented in the pH logbook.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	See pH log for results and additional preservation documentation
Headspace in Methyl Mercury Container	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13.
Headspace in VOA Vials (>6mm)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Trip Blank Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
Trip Blank Custody Seals Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

*Samples to be filtered in lab*

**CLIENT NOTIFICATION/RESOLUTION**

Field Data Required? ☐ Yes ☐ No

Person Contacted: \_\_\_\_\_

Date/Time: \_\_\_\_\_

Comments/Resolution: \_\_\_\_\_

FECAL WAIVER ON FILE Y N

TEMPERATURE WAIVER ON FILE Y N

Project Manager Review:

*[Signature]*

Date: 5/4/17

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)